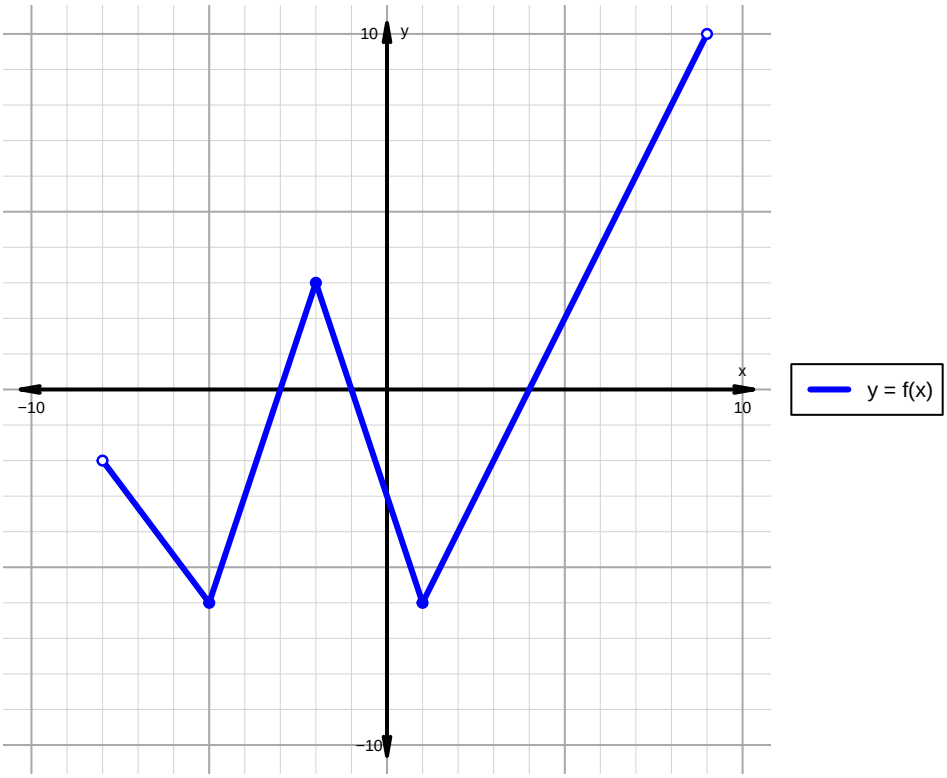
Name: Date:

Intervals, Transformations, and Slope Solution (version 75)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-3,-1)\cup(4,9)$
Negative	$(-8,-3)\cup(-1,4)$
Increasing	$(-5,-2)\cup(1,9)$
Decreasing	$(-8,-5)\cup(-2,1)$
Domain	$(-8,9)$
Range	$(-6,10)$

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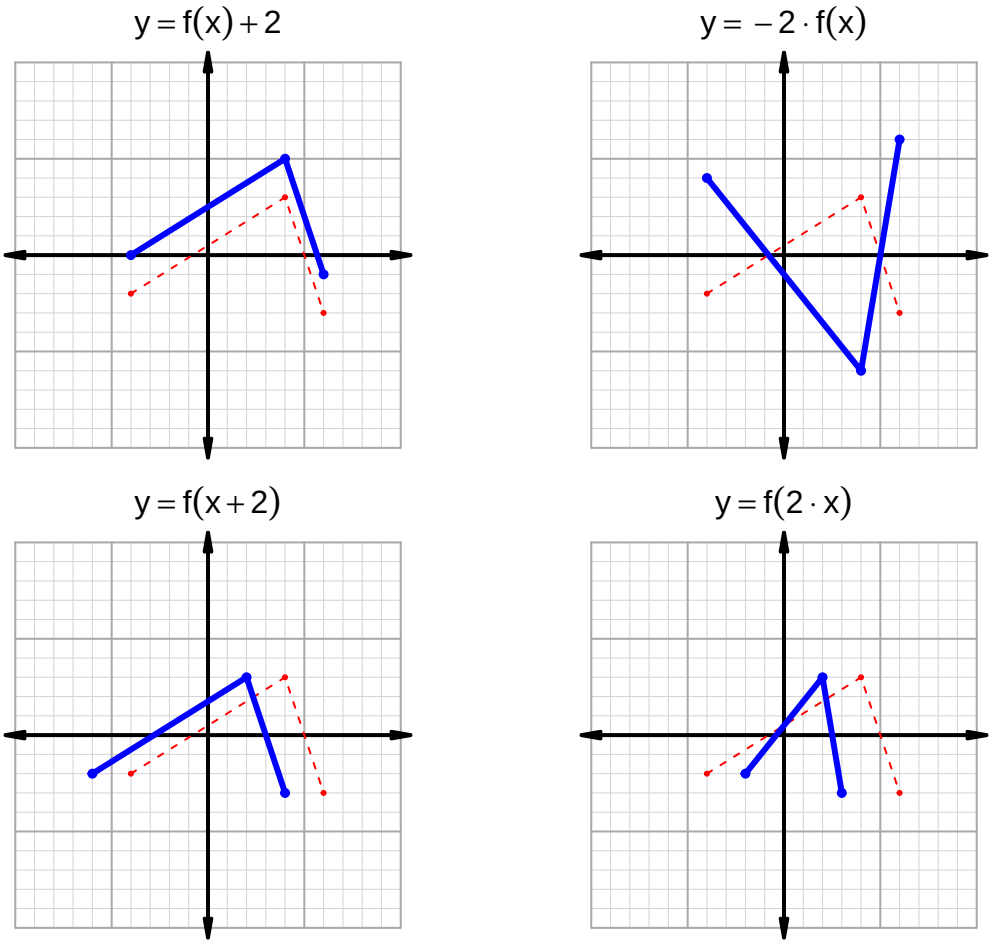
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 31$ and $x_2 = 73$. Express your answer as a reduced fraction.

x	$g(x)$
31	69
34	31
69	73
73	34

$\frac{g(73)-g(31)}{73-31} = \frac{34-69}{73-31} = \frac{-35}{42}$

The greatest common factor of -35 and 42 is 7. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-5}{6}$$